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ON A COLLECTION OF FISHES FROM NANYO, THE JAPANESE MANDATED ISLANDS[1]

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It is now more than a century since the first scientific expedition collected fishes among the islands of Micronesia, but their fish fauna is still only partially known. In recent years a number of Japanese biologists have studied the plants and animals of Nanyo, as the Japanese call Micronesia, to a considerable extent. One of the most enthusiastic and persevering is Prof. Teiso Esaki, of the entomological laboratory of Kyushu Imperial University at Fukuoka, Japan. Prof. Esaki, whom I met in Nanyo some years ago while collecting fishes in the Pelew Islands, has made several trips there and has visited all parts of Micronesia. Along with the arduous collecting of insects, Prof. Esaki has found time to collect fishes. The collection here determined was made during the interval from October, 1937, to March, 1938, when Prof. Esaki was traveling in the Marianes, and the Caroline, Marshall, and Pelew Islands.

This collection, sent me through the courtesy of Prof. Esaki, contains 88 species, of which one is new. The others are nearly all of wide distribution in the tropical Pacific. They are but a small part of the number actually living in the waters of Micronesia, but nevertheless are important since this collection gives us additional data upon the local distribution of fishes in Nanyo. Several species are here reported for the first time from the Pelew Islands.

Prof. Esaki's principal collecting was done as follows:—38 species were taken from the harbor at Ponape, most of them being coral reef fishes; 34 species were obtained from a tide pool at the edge of the mangroves at Gorror, Pelew Islands; 12 species of shore fishes were taken at Malem, Kusaie; 4 species of fresh-water fishes were taken from streams on Kusaie and Ponape.

Prof. Esaki is to be highly complimented for his zeal in making

[1] Results of Professor T. Esaki's Micronesia Expeditions 1936-1938, No. 37.

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this collection and adding thereby to our knowledge of the fishes of those remote islands. It is hoped that ere long the economic and scientific importance of the fishes of Nanyo will induce the authorities to undertake a survey of the fish fauna of Micronesia. It should be conducted by an experienced professional ichthyologist, free to devote his entire time to making an adequate collection and then to study and report upon it.

Family DUSSUMIERIDAE

Spratelloides delicatulus (Bennett)

Ten specimens, 28 to 56 mm in length, from Ponape.

Family ANGUILLIDAE

Anguilla mauritiana Bennett

Good examples were taken from fresh water streams as follows:— 2 of 283 and 460 mm from Ponape, and 2 of 345 and 420 mm, from Kusaie.

Family MYRIDAE

Muraenichthys macropterus Bleeker

A specimen 220 mm. long was taken at Gorror.

Family OPHICHTHYIDAE

Ophichthus cephalozona (Bleeker)

A fine example 355 mm. long is from Gorror.

Family MURAENIDAE

Echidna nebulosa (Ahl)

A fine example, 365 mm. long is from Kusaie.

Gymnothorax boschi Bleeker

A juvenile specimen 82 mm. long was taken at Kusaie.

Gymnothorax petelli Bleeker

One example, from Kusaie, is 178 mm. long.

Gymnothorax undulatus (Lacépède)

Two specimens from Kusaie measure 168 and 178 mm.

Family PLOTOSIDAE

Plotosus anguillaris (Bloch)

Six examples from Gorror range from 122 to 196 mm. This severely stinging catfish is very abundant under and around massive coral heads, and is excellent eating.

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Family SYNODONTIDAE

Saurida gracilis (Quoy and Gaimard)

2 specimens, 78 and 106 mm. in length, were taken at Gorror.

Family TYLOSURIDAE

Tylosurus giganteus (Schlegel)

One example, 325 mm. long, is from Ponape.

Family HEMIRAMPHIDAE

Hemiramphus dussumieri Cuv. and Val.

Three specimens, 68 to 92 mm. in length are from Ponape.

Zenarchopterus brevirostris Günther

12 examples, 69 to 87 mm. in length, from Gorror. Not previously reported from the Pelews.

Family HOLOCENTRIDAE

Myripristis adustus Bleeker

A specimen 38 mm. long from Gorror.

Holocentrus sammara (Forskål)

A specimen 146 mm. long from Ponape.

Family AULOSTOMIDAE

Aulostomus valentini (Bleeker)

A good example, 395 mm. long, was secured at Ponape.

Family ATHERINIDAE

Atherina forskali Rüppell

Seven atypical examples, 36 to 54 mm. in length, from Ponape. Scales in longitudinal series 41; pre-dorsal scales 16. The first dorsal origin is opposite the 16th scale, that of the second dorsal opposite the 26th scale. The vent is 2 scales before the first dorsal origin. The pectoral is 6.75 times in the length. There are 5 or 6 gill rakers on the upper limb of the first arch, and 23 or 24 on the lower limb.

Family MUGILIDAE

Liza macrolepis (A. Smith)

Two juvenile examples 13 and 30 mm. in length, from Kusaie. This is the *Mugil troscheli* of Bleeker and other authors.

Mugil engeli Bleeker

Two well preserved examples, 137 and 141 mm. in length, from

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Ponape. There are 30 scales in a longitudinal, 11 in a transverse series, and 18 before the first dorsal. The maxillary is hidden when the mouth is closed. The first dorsal origin is opposite the 10th or 11th scale, and nearer to the caudal than to the tip of the snout; the second dorsal origin is opposite the 20th or 21st scale. There are long pointed axillary scales at the pectoral, ventral, and first dorsal. The least depth of the caudal peduncle is 2.35 to 2.4 times in the head.

Family SPHYRAENIDAE

Sphyraena barracuda Wallbaum

Two specimens, 120 and 236 mm. in length, from Gorror. New to the Pelew Islands.

Family CARANGIDAE

Caranx ignobilis (Forskål)

Six young specimens, 68 to 91 mm. in length, from Gorror.

Caranx sexfasciatus Quoy and Gaimard

A good example 180 mm. long from Ponape and 5 spceimens, 72 to 98 mm. in length, from Gorror.

Family LEIOGNATHIDAE

Leiognathus equulus (Forskål)

A young specimen 42 mm. long from Gorror.

Leiognathus fasciatus (Lac)

Five examples, 78 to 86 mm. in length, from Gorror.

Family GERRIDAE

Gerres abbreviatus Bleeker

Five specimens from Gorror, 37 to 56 mm. in length.

Family APOGONIDAE

Apogon hyalosoma Bleeker

Two good examples, 90 and 113 mm. in length, from Gorror. New to the Pelew Islands.

Apogon lateralis Valenciennes

Nine specimens, 46 to 63 mm. in length, are from Gorror and one of 55 mm. is from Ponape.

Apogon orbicularis (Cuv. and Val.)

A specimen 60 mm. long is from Gorror.

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Apogonichthys auritus (Cuv. and Val)

One example 51 mm. long from Gorror.

Family KUHLIIDAE

Kuhlia rupestris (Lac.)

Excellent specimens were taken from fresh water streams, as follows:—2 of 142 and 166 mm., from Ponape, and 2 of 116 and 146 mm. from Kusaie.

Family SERRANIDAE

Cephalopholis urodelus (Bl. and Schn.)

One specimen, 161 mm. long, of this handsome serranid was taken at Ponape. It is common on the coral reefs everywhere.

Epinephelus merra Bloch

Two specimens, 147 and 159 mm. in length, from Ponape. This is the commonest serranid on the coral reefs of Nanyo.

Family PLESIOPIDAE

Plesiops nigricans (Rüppell)

Four specimens, 50 to 67 mm. in length, were taken at Kusaie.

Family LUTIANIDAE

Lutianus russelli (Bleeker)

A young example, 81 mm. long, was caught at Gorror. New to the Pelew Islands.

Lutianus vaigiensis (Quoy and Gaimard)

Three specimens, from 75 to 118 mm. in length, were obtained at Gorror, and one of 77 mm. at Ponape.

Family POMADASIDAE

Caesio caerulaureus Lac.

14 young examples, 62 to 115 mm. in length, taken at Ponape.

Caesio pisang Bleeker

Eight specimens, 58 to 102 mm. in length are from Ponape.

Scolopsis cancellatus Cuv. and Val.

Three specimens from Ponape are 137 to 150 mm. in length.

Scolopsis ciliatus (Lac)

Eight specimens, 54 to 84 mm. in length, were taken at Gorror.

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Family LETHRINIDAE

Lethrinus harak (Forskål)

One example, 155 mm. long, is from Ponape and one of 136 mm. from Kusaie.

Pentapus caninus (Cuv. and Val.)

Five specimens, 46 to 76 mm. in length, from Gorror, where it is very common on the reef.

Family KYPHOSIDAE

Kyphosus cinerascens (Forskål)

Two specimens, 122 and 140 mm. in length, from Ponape.

Family MULLIDAE

Mulloidichthys samoensis (Günther)

Nine specimens, 80 to 115 mm. in length, were taken at Ponape.

Parupeneus barberinus (Lac.)

Two juvenile specimens from Ponape measure 32 and 36 mm.

Parupeneus trifasciatus (Lac.)

Two examples from Ponape, one but 47 mm., the other 105 mm. long.

Family MONODACTYLIDAE

Monodactylus argenteus (L.)

Two specimens of 56 and 67 mm. are from Gorror; another 97 mm. long was taken at Ponape.

Family TOXOTIDAE

Toxotes jaculator (Pallas)

This archer-fish is very common in the mangrove areas of Gorror, where Prof. Esaki collected 5 examples, 71 to 135 mm. in length.

Family CHAETODONTIDAE

Chaetodon auriga Forskål

Three specimens, 56 to 96 mm. in length, from Ponape.

Chaetodon ephippium (Cuv. and Val.)

A fine example from Ponape is 114 mm. long.

Chaetodon trifasciatus (M. Park)

Two specimens, from 65 to 74 mm. in length, were taken at Ponape.

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Family ZANCLIDAE

Zanclus cornutus (L.)

Two examples of this fantastic fish, 78 and 80 mm. in length, were taken at Wotje Atoll in the Marshall Islands.

Family ACANTHURIDAE

Acanthurus triostegus (L.)

Two specimens, 114 and 118 mm. in length, are from Ponape.

Ctenochaetus strigosus (Bennett)

One example, 90 mm. long, was caught at Ponape.

Zebrasoma flavescens (Bennett)

A specimen 83 mm. long was taken at Ponape.

Family SIGANIDAE

Lo vulpinus (Schlegel)

One good specimen, 180 mm. long, was taken at Ponape.

Teuthis concatenata (Cuv. and Val.)

Five specimens, 72 to 112 mm. in length, are from Gorror.

Teuthis fuscescens (Houttuyn)

3 specimens, 59 to 94 mm. in length, were taken at Ponape.

Teuthis javus (L.)

An example of this siganid, 140 mm. in length, was taken at Gorror. New to the Pelew Islands.

Family POMACENTRIDAE

Chromis ternatensis Bleeker

17 specimens, 36 to 66 mm., from Ponape.

Pomacentrus amboinensis Bleeker

Three specimens, 59 to 71 mm. in length, from Gorror.

Pomacentrus tripunctatus C. & V.

Two examples, each 77 mm. in length, from Gorror.

Abudefduf cyaneus (Quoy and Gaimard)

Two small examples, 17 and 20 mm. in length, from Kusaie.

Abudefduf glaucus (Cuv. and Val.)

One specimen 64 mm. long, from Ponape.

Abudefduf sordidus (Forskål)

A specimen 47 mm. long was taken at Ponape.

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Abudefduf septemfasciatus (Cuv. and Val.)

One example from Ponape is 117 mm. in length, and a juvenile specimen 12 mm. long from Kusaie.

Family LABRIDAE

Choerodon anchorago (Bloch)

Four specimens, 62 to 169 mm. in length from Gorror. One of the commonest reef fishes in the Pelew Islands.

Halichoeres margaritaceus (Cuv. and Val.)

A specimen 44 mm. long, from Ponape.

Labroides xanthurus Bleeker

A very small but typical specimen, 15 mm. long, from Kusaie. Hitherto known from Celebes, Amboyna and the Sulu archipelago.

Stethojulis axillaris (Quoy and Gaimard)

Two specimens from Ponape are 41 and 45 mm. in length.

Stethojulis phekadopleura (Bleeker)

One example 49 mm. long, from Ponape.

Stethojulis strigiventer (Bennett)

Six specimens from Ponape measure from 47 to 52 mm.

Family SCARIDAE

Scarus erythrodon Cuv. and Val.

From Ponape is an example 161 mm. long.

Scarus harid (Forskål)

Three specimens, 58 to 71 mm. in length, from Ponape.

Family ELEOTRIDAE

Bunaka pinguis Herre

A specimen 151 mm. long, from the Malam river, Kusaie. Scales in a longitudinal series, 55; predorsal scales 36; in transverse series, 18 or 19. Dorsal VI–I—8; anal I—7; teeth in upper jaw in about 12 rows, and in 10 rows in the mandible.

According to Dr. Koumans this species is identical with *Eleotris gyrinoides* Bleeker. If this is correct, the name must stand as *Bunaka gyrinoides* (Bleeker). It is certainly not an *Eleotris*, nor does it agree with the genus *Guavina*, in which *Eleotris gyrinoides* has sometimes been placed.

Eviota viridis (Waite)

Two specimens of this minute and widespread eleotrid, 12 and 14 mm. in length, were taken at Kusaie.

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Valenciennea muralis (Quoy and Gaimard)

A single example, 68 mm. long, from Gorror, Pelew Islands, where it is abundant.

Family GOBIIDAE

AMBLYGOBIUS ESAKIAE Herre, new species

Dorsal VI—I—14 or 15; anal I—16; scales in a longitudinal series about 72, in a transverse series about 26.

The body is low, elongate, laterally compressed, especially on the hind half, the dorsal profile nearly horizontal, the depth 5 to 5.5 times, the head 3.95 to 4 times in the length. The elongate and pointed caudal is 2.5, the pectoral 3.66, the small ventrals 5 times in the length. The large laterodorsal eyes are contained 4 times in the bluntly pointed head, the snout 5 times; the interorbital space is about twice in an eye diameter. The mouth is oblique, the jaws equal, the maxillary extending beneath the middle of the eye. The teeth are typical of the genus, with a large recurved posterior canine on each side of the lower jaw. The head is entirely naked, the nape naked back to the dorsal origin, and the pectoral base is naked; the scales on the body are cycloid, becoming much larger posteriorly. The dorsals are very close together; the last ray of the first dorsal reaches to the base of the fourth ray of the second dorsal and is contained twice in the head. The second dorsal and anal are alike, angulate posteriorly; the last ray of the second dorsal extends upon the caudal base when depressed, its length 1.4 times the head; the last anal ray reaches the caudal base and is 1.75 times in the head. The least depth of the caudal peduncle nearly equals its length, both about twice in the head.

The color in alcohol is uniform purplish brown, with two longitudinal blackish brown stripes; the upper one extends from middle of the hind edge of the eye back to the end of the second dorsal base and top of the caudal peduncle; the other extends from the pectoral axil to the middle of the caudal base; a stripe runs back from the angle of the mouth across the cheek, and continues on the opercle and pectoral base; there is a spot also on the inner side of the pectoral base; all the stripes are pearly or opal escent blue in life. On the nape is a row of 4 large brown ocellated spots; between them and the upper longitudinal stripe is a row of brown spots extending from the eye as far back as the hind end of the first dorsal. The fins are all clear.

Described from the type, 55 mm. long and one paratype, 50 mm.

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long, taken at Gorror. I take pleasure in dedicating this unique species to its collector, Prof. Teiso Esaki.

Amblygobius perpusillus buanensis Herre

Two examples, 59 and 60 mm. in length from, Gorror.

Chonophorus genivittatus (Cuv. and Val)

Two specimens, 47 and 50 mm. in length, were taken from a fresh water stream at Malem, Jusaie.

Ctenogobius caninus (Cuv. and Val.)

One example, 70 mm. long, from Gorror. This widely distributed species is new to the Pelew Islands.

Gnatholepis puntangoides (Bleeker)

Two specimens from Gorror, 42 and 58 mm. in length.

Glossogobius biocellatus (Cuv. and Val.)

A specimen 52 mm. long, from Gorror, is the first of this species recorded from the Pelew Islands.

Periophthalmus barbarus Linnaeus

Two examples of this wide-spread common mud skipper were taken at Gorror.

Vaimosa horiae Herre

A specimen 24 mm. long was taken from Lake Charanka, a brackish water lake on Saipan, one of the Marianas.

Family BLENNIIDAE

Tripterygion minutum Günther

One example of this widely distributed little blenny, 18 mm. long, was taken at Kusaie.

Family BALISTIDAE

Balistes chrysopterus Bl. and Schn.

One specimen 72 mm. long was obtained at Ponape.

Family TETRAODONTIDAE

Tetraodon hispidus L.

Two very young specimens from Kusaie are only 14 or 15 mm. long.

Tetraodon immaculatus Bl. and Schn.

This common East Indian puffer is represented by two examples, 55 and 58 mm. in length from Gorror. New to the Pelew Islands.

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